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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/759,870 | 01/12/2001 | Stanley Kin-Sui Cheng | LWC-174 | 2420 |

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Kevin G. Rooney
WOOD, HERRON & EVANS, L.L.P.
2700 Carew Tower
441 Vine Street
Cincinnati, OH 45202-2917

EXAMINER

WONG, EDNA

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1741

DATE MAILED: 05/09/2002

5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/759,870

Applicant(s)

CHENG, STANLEY KIN-SUI

Examiner

Edna Wong

Art Unit

1741

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 14 and 15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Detailed Action

Election/Restriction

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-13, drawn to method of surface treating a cookware article, classified in class ~~524~~⁴²⁷, subclass ~~261~~.
 - II. Claims 14-15, drawn to article of cookware, classified in class 428, subclass 212.
2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product can also be made by applying an extruded coating of porcelain enamel to the exterior of the article.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Kevin Rooney on March 14, 2002, a provisional election was made with traverse to prosecute the invention of group I, claims 1-13. Affirmation of this election must be made by applicant in replying to this Office action. Claims 14-15, withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently name inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Specification

The disclosure is objected to because of the following informalities:

page 6, line 20, it is unclear what is meant by "Instead of then immediately".

page 8, line 8, a -- , -- (comma) should be inserted after the word "curing,".

Appropriate correction is required.

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

Claims **4-5 and 11** are objected to because of the following informalities:

Claim 4

line 3, it is suggested that the word -- of -- be inserted after the word "range".

Claim 5

line 3, it is suggested that the word -- of -- be inserted after the word "range".

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Claim 11

line 9, it is suggested that the word -- of -- be inserted after the word "range".

line 14, it is suggested that the word -- of -- be inserted after the word "range".

line 17, it is suggested that the word -- surface -- be inserted after the word "interior".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

I. Claims **11 and 13** are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for applying a second porcelain coating to the **exterior** of the article, does not reasonably provide enablement for applying a second porcelain coating to the **interior** of the article. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to carry out the invention commensurate in scope with these claims.

Applicant's specification discloses that a second porcelain coating is applied to the exterior of the article (page 8, lines 5-6). However, claim 11, as presently written, is open to applying a second porcelain coating to the interior of the article.

II. Claims 11 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11

line 4, the words "disc-like" is indefinite.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Process

I. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doyle et al. (US Patent No. 5,628,426) in combination with Paul (US Patent No. 5,411,014).

Doyle teaches a method of surface treating a cookware article formed of aluminum comprising the steps of:

- (a) subjecting the interior of the article 10 to hard anodizing; and
 - (b) coating the hard anodized interior of the article with a non-stick coating 100
- (col. 4, lines 54-57; col. 4, line 66 to col. 5, line 43; and Figs. 1-9).

Doyle does not teach applying a first coating of porcelain enamel to the exterior of the article.

However, Paul teaches applying a coating of porcelain enamel to the exterior of an aluminum pan for aesthetic reasons (col. 3, line 61 to col. 4, line 3; col. 5, lines 5-7; and Figs. 2 and 3).

The porcelain enamel coating is applied by a spraying operation. The coating is subjected to an infrared curing process to achieve partial hardening of the porcelain and complete hardening is achieved by a forced air cooling process. Friction materials are applied via a silk screening process. If a decorative finished is desired, additional decorative material may be silk screened onto the sidewall (col. 5, line 62 to col. 6, line 6; and Fig. 4).

Thus, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because one skilled in the art would have been motivated to have modified the method of Doyle by applying a first coating of porcelain enamel to the exterior of the article because this would have made the exterior of the article visually pleasing to look at as taught by Paul (col. 3, line 61 to col. 4, line 3; col. 5, lines 5-7; col. 5, line 62 to col. 6, line 6; and Figs. 2-4).

As to applying a second coating of porcelain enamel over the first coating, this is

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well within the skill of the artisan because the repetition of the applying step to provide the same results is within the skill of one having ordinary skill in the art. The concept of duplication is not patentable. *St. Regis Paper Co. v. Bemis Co. Inc.*, 193 USPQ 8, 11 (7th Cir. 1977). While this decision relates to the duplication of parts, there is no reason why such duplication cannot be extended to a process step.

As to wherein the porcelain enamel is applied as a porcelain slip which is cured at an elevated temperature, Paul teaches that the porcelain enamel coating is subjected to an infrared curing process to achieve partial hardening of the porcelain and complete hardening is achieved by a forced air cooling process (col. 5, lines 62-66).

Paul appears to disclose a porcelain enamel coating at least in a similar manner as instantly claimed. Therefore, it would have been within the skill of the art to expect that the porcelain enamel coating disclosed by Paul is a porcelain slip, unless proven otherwise.

It appears that the infrared curing process and/or the forced air cooling process is curing at an elevated temperature, unless proven otherwise.

As to wherein the second porcelain enamel coating is subjected to curing at a temperature which is sufficient to at least partially remelt the surface of the first porcelain enamel coating, (repetition of steps) to apply a second porcelain enamel coating by subjecting the article to a second infrared curing process to achieve partial

hardening of the porcelain and complete hardening is achieved by a second forced air cooling process, it appears that the infrared curing process and/or the forced air cooling process is curing at a temperature which is sufficient to at least partially remelt the surface of the first porcelain enamel coating, unless proven otherwise.

As to wherein the first porcelain enamel coating is applied as a layer of thickness in the range of 25 to 35 microns, the thickness of the first porcelain enamel coating is a result-effective variable and one skilled in the art has the skill to calculate the thickness that would determine the success of the desired reaction to occur, i.e., selected primarily on its ability to absorb heat quickly, i.e., to transmit heat from a heat source to the cooking surface, absent evidence to the contrary. MPEP § 2141.03 and § 2144.05(b).

As to wherein the second porcelain enamel coating is applied as a layer of thickness in the range of 30 to 35 microns, the thickness of the second porcelain enamel coating is a result-effective variable and one skilled in the art has the skill to calculate the thickness that would determine the success of the desired reaction to occur, i.e., selected primarily on its ability to absorb heat quickly, i.e., to transmit heat from a heat source to the cooking surface, absent evidence to the contrary. MPEP § 2141.03 and § 2144.05(b).

As to wherein the second porcelain coating is subjected to rapid drying using infrared heating means to dry the enamel surface, followed by silkscreen printing of a pattern onto the dried surface, this is well within the skill of the artisan as taught by Paul for providing resistance to sliding and/or for a decorative finish (col. 5, line 62 to col. 6, line 6).

As to wherein the first porcelain is heated to curing at a temperature in the region of 540 to 555°C, the curing temperature is a result-effective variable and one skilled in the art has the skill to calculate the temperature that would determine the success of the desired reaction to occur, i.e., curing the coating, absent evidence to the contrary. MPEP § 2141.03 and § 2144.05(b).

Furthermore, it appears that the curing temperature would have depended upon the composition of the porcelain enamel coating. It appears that different porcelain enamel coating compositions would have cured at different temperatures.

As to wherein said curing is carried out for 1 to 1.5 minutes, the curing time is a result-effective variable and one skilled in the art has the skill to calculate the curing time that would determine the success of the desired reaction to occur, i.e., curing the coating, absent evidence to the contrary. MPEP § 2141.03 and § 2144.05(b).

Furthermore, it appears that the curing time would have depended upon the composition of the porcelain enamel coating and the conditions of the process. It

appears that different porcelain enamel coating compositions would have cured at different times and process conditions.

As to wherein at step (a) the interior of the article is subjected to anodizing for less than 20 minutes, the anodizing time is a result-effective variable and one skilled in the art has the skill to calculate the anodizing time that would determine the success of the desired reaction to occur, i.e., anodizing the article, absent evidence to the contrary. MPEP § 2141.03 and § 2144.05(b).

Furthermore, it appears that the anodizing time would have depended upon the conditions of the anodizing process, the composition of the alloy material and the desired thickness of the anodic oxide coating. It appears that different process conditions, type of alloy material and the desired thickness would have contributed to different anodizing times.

Process and Product

II. Claims **11** and **13** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Doyle et al.** (US Patent No. 5,628,426) in combination with **Paul** (US Patent No. 5,411,014).

Doyle teaches a method of forming an article of cookware of aluminum, comprising the steps of:

(a) providing a round disk of flat metal **10**;

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(b) forming the article by stamping into the desired shape;
(c) subjecting the interior surface to hard anodizing; and
(d) applying a non-stick coating **100** to the hard anodized interior surface of the article (col. 4, lines 54-57; col. 4, line 66 to col. 5, line 43; and Figs. 1-9).

Doyle does not teach applying a first coating of porcelain slip to the exterior of the article having a thickness in the range of 25 to 35 microns and curing at an elevated temperature to produce a hard enamel; and applying a second coating of porcelain slip having a thickness in the range of 30 to 35 microns and curing to produce a hard enamel.

However, Paul teaches applying a coating of porcelain enamel to the exterior of an aluminum pan for aesthetic reasons (col. 3, line 61 to col. 4, line 3; col. 5, lines 5-7; and Figs. 2 and 3).

The porcelain enamel coating is applied by a spraying operation. The coating is subjected to an infrared curing process to achieve partial hardening of the porcelain and complete hardening is achieved by a forced air cooling process (col. 5, line 62 to col. 6, line 6; and Fig. 4).

Thus, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because one skilled in the art would

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have been motivated to have modified the method of Doyle by applying a first coating of porcelain enamel to the exterior of the article because this would have made the exterior of the article visually pleasing to look at as taught by Paul (col. 3, line 61 to col. 4, line 3; col. 5, lines 5-7; col. 5, line 62 to col. 6, line 6; and Figs. 2-4).

As to wherein the first porcelain slip has a thickness in the range of 25 to 35 microns, the thickness of the first porcelain slip is a result-effective variable and one skilled in the art has the skill to calculate the thickness that would determine the success of the desired reaction to occur, i.e., selected primarily on its ability to absorb heat quickly, i.e., to transmit heat from a heat source to the cooking surface, absent evidence to the contrary. MPEP § 2141.03 and § 2144.05(b).

As to curing at an elevated temperature to produce a hard enamel, Paul teaches that the porcelain enamel coating is subjected to an infrared curing process to achieve partial hardening of the porcelain and complete hardening is achieved by a forced air cooling process (col. 5, lines 62-66).

Paul appears to disclose a porcelain slip at least in a similar manner as instantly claimed. Therefore, it would have been within the skill of the art to expect that the porcelain enamel coating disclosed by Paul is a porcelain slip, unless proven otherwise.

It appears that the infrared curing process and/or the forced air cooling process is curing at an elevated temperature, unless proven otherwise.

As to applying a second coating of porcelain slip, this is well within the skill of the artisan because the repetition of the applying step to provide the same results is within the skill of one having ordinary skill in the art. The concept of duplication is not patentable. *St. Regis Paper Co. v. Bemis Co. Inc.*, 193 USPQ 8, 11 (7th Cir. 1977). While this decision relates to the duplication of parts, there is no reason why such duplication cannot be extended to a process step.

As to wherein the porcelain slip has a thickness in the range of 30 to 35 microns, the thickness of the second porcelain slip is a result-effective variable and one skilled in the art has the skill to calculate the thickness that would determine the success of the desired reaction to occur, i.e., selected primarily on its ability to absorb heat quickly, i.e., to transmit heat from a heat source to the cooking surface, absent evidence to the contrary. MPEP § 2141.03 and § 2144.05(b).

As to curing to produce a hard enamel, Paul teaches that the porcelain enamel coating is subjected to an infrared curing process to achieve partial hardening of the porcelain and complete hardening is achieved by a forced air cooling process (col. 5, lines 62-66).

Product

III. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Doyle et**

al. (US Patent No. 5,628,426) in combination with **Paul** (US Patent No. 5,411,014).

Doyle teaches an article of cookware of aluminum **10** comprising:

an interior hard anodized surface covered with a non-stick coating **100** (col. 4, lines 54-57; col. 4, line 66 to col. 5, line 43; and Figs. 1-9).

Doyle does not teach two exterior coatings of porcelain enamel.

However, Paul teaches applying a coating of porcelain enamel to the exterior of an aluminum pan for aesthetic reasons (col. 3, line 61 to col. 4, line 3; col. 5, lines 5-7; and Figs. 2 and 3).

Thus, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because one skilled in the art would have been motivated to have modified the method of Doyle by applying a first coating of porcelain enamel to the exterior of the article because this would have made the exterior of the article visually pleasing to look at as taught by Paul (col. 3, line 61 to col. 4, line 3; col. 5, lines 5-7; col. 5, line 62 to col. 6, line 6; and Figs. 2-4).

As to the second exterior coating of porcelain enamel, this is well within the skill of the artisan because the repetition of the applying step to provide the same results is within the skill of one having ordinary skill in the art. The concept of duplication is not

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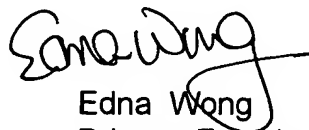
patentable. *St. Regis Paper Co. v. Bemis Co. Inc.*, 193 USPQ 8, 11 (7th Cir. 1977).

While this decision relates to the duplication of parts, there is no reason why such duplication cannot be extended to a process step.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edna Wong whose telephone number is (703) 308-3818. The examiner can normally be reached on Mon-Fri 7:30 am to 5:00 pm, alt. Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (703) 308-3322. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 873-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


Edna Wong
Primary Examiner
Art Unit 1741

EW
May 7, 2002